which is a continuation of prior application serial no. 08/428,404, filed April 25, 1995, which is a continuation-in-part of prior application serial no. 08/233,054, filed April 26, 1994, all of which are incorporated herein by reference.

A "marked" version of this paragraph that shows the actual amendments is included as Appendix A.

In The Claims

Please cancel claims 1, and 12 to 19.

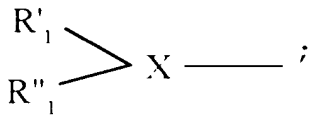
Please insert the following amended claims in the specification.

2. (amended) A non-naturally occurring compound that specifically inhibits the activity of factor Xa, having the general formula A_1-A_2-$(A_3)_m$-B, wherein m is 1;

wherein A_1 is R_1-R_2-R_3; A_2 is R_4-R_5-R_6; A_3 is R_7-R_8-R_9;

wherein

R_1 is



;

X is N;

R'_1 is selected from the group consisting of isobutyl, 2-methylpentyl, cyclohexylmethyl, cyclohexenylmethyl, 2-methylbutyl, -H and 2,3-dimethylpentyl;

R''_1 is selected from the group consisting of 2-benzofuroyl, alloc, acetyl, trifluoroacetyl, 2-quinolinoyl, 3-pyridoyl, 4-isoquinolinoyl, 5-benzylimidazoyl, 2-naphthylmethyl, 5-pyridiminoyl, benzoyl, 2-pyridoyl, tosyl, 3-quinolinoyl, 2-naphthylsulfonyl, 2-methylbenzyl, 2-furoyl, 3,4-dichlorobenzoyl, 2-thienylacetyl, N(5-methyl-2-thienyl), ethoxycarbonyl, 2-fluorobenzoyl, *t*-butoxycarbonyl, benzyl and 1-20 amino acids;

R_2 is $-CR_{2A}R_{2B}-$, wherein $-R_{2A}$ and $-R_{2B}$ are independently selected from the group consisting of -H, 4-amidinophenylmethyl, 4-aminophenylmethyl), 4-hydroxyphenylmethyl, 2-naphthylmethyl,

4-(N-methylpyridinyl)methyl,
(3-iodo-4-aminophenyl)methyl,
(4-aminocarbonylphenyl)methyl,
(3-iodo-4-hydroxyphenyl)methyl, and
(4-cyanophenyl)methyl, (4-hydroxyphenyl)methyl;

P_3 is -C(O)-;

P_4 is -NH-;

P_5 is $-CR_{5A}R_{5B}$, wherein $-R_{5A}$ and $-R_{5B}$ are independently selected from the group consisting of -H, 2-butyl, and cyclohexyl;

P_6 is -C(O)-;

P_7 is -NH-;

P_8 is $-CR_{8A}R_{8B}$, wherein $-R_{8A}$ and $-R_{8B}$ are independently selected from the group consisting of -H, 3-guanylpropyl, (dimethylamidinium)aminomethyl, (dimethylamidinium)aminoethyl, 3-(N-methylpyridinyl)methyl, and 4-(N-methylpyridinyl)methyl;

P_9 is -C(O)-; and

E is Leu-Pro-NH_2, Leu-Hyp-NH_2, Pen(CH_2COOH)-Pro-NH_2, Cys(CH_2COOH)-Pro-NH_2, γ-carboxyglutamic

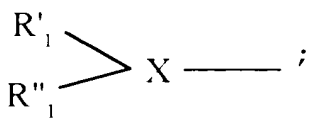
acid-Pro-NH_2, (N-carboxymethyl)Gly-Pro-NH_2,
(N-carboxyethyl)Gly-Pro-NH_2,
(N-1,3-dicarboxypropyl)Gly-Pro-NH_2,
(N-methyl)Leu-Pro-NH_2, Leu-NH_2, Leu-OH,
-NH-(4-trimethylammoniumbenzyl),
-NH-[4-(1-methylpyridinium)methyl], and
-NH-(4-amidinobenzyl).

3. (amended) A non-naturally occurring compound that specifically inhibits the activity of factor Xa, having the general formula A_1-A_2-$(A_3)_m$-B, wherein m is 1;

wherein A_1 is R_1-R_2-R_3; A_2 is R_4-R_5-R_6; A_3 is R_7-R_8-R_9;

wherein

R_1 is



;

X is N;

R'_1 is selected from the group consisting of H, isobutyl, 2-methylpentyl, cyclohexylmethyl, 3-quinolinyl, 2-methylbutyl, 2,3 dimethyl pentyl, and cyclohexenylmethyl;

R''_1 is selected from the group consisting of 2-

benzofuroyl, alloc, acetyl, trifluoroacetyl, 2-quinolinoyl, 3-pyridoyl, 4-isoquinolinoyl, 5-benzimidazoyl, 2-naphthylmethyl, 5-pyrazinoyl, benzoyl, 2-pyridoyl, tosyl, 3-quinolinoyl, 2-naphthylsulfonyl, 2-methylbenzyl, and benzyl;

R_2 is $-CR_{2A}R_{2B}$, wherein $-R_{2A}$ and $-R_{2B}$ are independently selected from the group consisting of H, 3-amidinophenylmethyl, 4-amidinophenylmethyl, 4-aminophenylmethyl, 4-hydroxyphenylmethyl, 2-naphthylmethyl, 4-(N-methylpyridinyl)methyl, (3-iodo-4-aminophenyl)methyl, (4-aminocarbonylphenyl)methyl, (3-iodo-4-hydroxyphenyl)methyl, (4-cyanophenyl)methyl, and 3-indolylmethyl;

R_3 is selected from the group consisting of $-C(O)-$, $-CH_2-$, $-CHR_{99}-C(O)-$ and $-C(O)-NR_{35}-CH_2-C(O)-$, wherein R_{35} is the CHR_{55} group of the bridging group $-C(O)-CR_{55}-$;

R_4 is $-NH-$;

R_5 is $-CR_{5A}R_{5B}$, wherein $-R_{5A}$ and $-R_{5B}$ are independently selected from the group consisting of -H, 2-butyl, cyclohexyl and phenyl;

P_2 is -C(O)-;

P_1 is -NH-;

P_2 is $-CR_{2A}R_{2B}$, wherein $-R_{2A}$ and $-R_{2B}$ are independently selected from the group consisting of -H, 3-guanylpropyl, (dimethylamidinium)aminomethyl, (dimethylamidinium)aminoethyl, 3-(N-methylpyridinyl)methyl, N(carboxymethyl)(3-pyridinylmethyl), and 4-(N-methylpyridinyl)methyl;

P_3 is selected from the group consisting of -C(O)-, $-CH_2-$ and $-CHR_{3B}-C(O)-$; and

B is $-NH_2$, -OH, Leu-Pro-NH_2, Leu-Hyp-NH_2, Pen(CH_2COOH)-Pro-NH_2, Cys(CH_2COOH)-Pro-NH_2, γ-carboxyglutamic acid-Pro-NH_2, (N-carboxymethyl)Gly-Pro-NH_2, (N-carboxyethyl)Gly-Pro-NH_2, (N-1,3-dicarboxypropyl)Gly-Pro-NH_2, (N-methyl)Leu-Pro-NH_2, Leu-NH_2, and Leu-OH.

11. (amended) A compound selected from the group consisting of

Alloc-pAph-Chg-Pal(3)Me-NH_2;

(2-quinolinoyl)-pAph-Chg-Pal(3)Me-NH_2;

Ac-pAph-Chg-Pal(3)Me-NH(1-methoxycarbonyl)-1-cyclohexyl;

Ac-pAph-Chg-Arg-NH_2;

(2-pyridoyl)-pAph-Chg-Pal(3)Me-NH_2;

$CF_3C(O)$-(iBu)Phe(pNH_2)-Chg-Arg-NH_2;

Ac-pAph-Chg-Pal(3)Me-NH-(1-methoxycarbonyl)-1-cyclopentyl;

Ac-pAph-Chg-Pal(3)Me-NH-(4-methoxycarbonyl-cyclohexyl)methyl;

Ac-pAph-Chg-Pal(3)Me-NH-(3-thienyl-2-carboxylic acid methyl ester);

Ac-pAph-Chg-Arg-NH_2;

$CF_3C(O)$-(iBu)Tyr-Chg-Arg-OH;

Ac-pAph-Chg-Pal(3)Me-NH-(4-methoxycarbonyl-cyclohexyl)methyl;

Ac-pAph-Chg-Pal(3)Me-NH_2;

Ac-pAph-Chg-Pal(3)(CH_2COOH)-NH_2;

(2-quinolinecarboxy)-pAph-Chg-Pal(3)Me-NH_2;

Ac-pAph-Chg-Pal(3)Me-NH-(4-carboxycyclohexyl)methyl; and

$CF_3C(O)$(iBu)-Tyr-Ile-Arg-NH_2.

21. (amended) A compound Ac-*D*-pAph-Chg-Pal(3)Me-Leu-Pro-NH .